

Notice of Allowability

Application No.

10/661,699

Examiner

Igor Kershteyn

Applicant(s)

DIAKUNCHAK, IHOR S.

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 12 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 09/12/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Reasons for allowance

The following is an examiner's statement of reasons for allowance:

The instant invention is deemed to be directed to an unobvious improvement to a sealing system for reducing a gap between a tip of a turbine blade and a shroud of a turbine engine over U.S. Patent No. 6,733,235 which teaches a turbine blade assembly having at least one stage formed from a plurality of turbine blades 42; a blade ring 40 radially surrounding the turbine blade assembly 42 such that the blade ring 40 may radially expand and contract during operation as a result of thermal expansion or contraction, a ring segment 10 having at least one ring segment sealing surface 22 positioned in close proximity to at least one tip 41 of the plurality of turbine blades 42 of the turbine blade assembly such that the ring segment 10 forms a gap between the at least one ring segment sealing surface 22 and the plurality of blades 42, a spindle 54 fixed to the blade ring 40 at a first end of the spindle 54 and coupled to the ring segment 10 at a second end of the spindle 54 for positioning the ring segment in close proximity with at least one tip of the plurality of blades.

Regarding claims 1, 8, and 14, the improvement comprises the spindle supporting and positioning the ring segment in close proximity with at least one tip of the plurality of blades wherein the spindle is formed from a material having a coefficient of thermal expansion that is greater than a coefficient of thermal expansion for a material forming the blade ring.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of two patents.

Needham et al. (4,050,843) is cited to show a sealing system for reducing a gap between a tip of a turbine blade and a shroud of a turbine engine having a spindle for positioning a shroud segment but fails to teach the spindle being formed from a material having a coefficient of thermal expansion that is greater than a coefficient of thermal expansion for a material forming a blade ring.

Damlis et al. (5,228,828) is cited to show a sealing system for reducing a gap between a tip of a turbine blade and a shroud of a turbine engine having a spindle for positioning a shroud segment but fails to teach the spindle being formed from a material having a coefficient of thermal expansion that is greater than a coefficient of thermal expansion for a material forming a blade ring.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is

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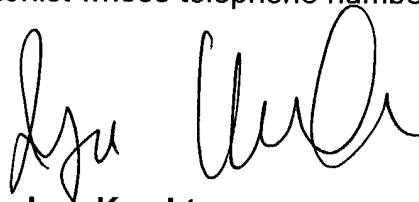
(571)272-4817. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is (703) 872-9306.

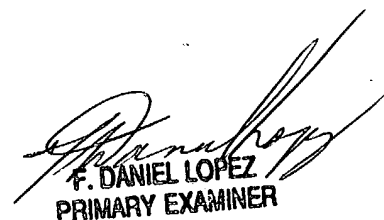
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK

November 22, 2004



Igor Kershteyn
Patent examiner.
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F. DANIEL LOPEZ
PRIMARY EXAMINER